

PUTTING TRANSPORTATION DATA IN ITS PLACE: A GIS STRATEGY

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8/19/2015

Overview

- ▶ **Linear Referencing**
- ▶ **Putting GIS Data to work**
- ▶ **Making GIS Data Accessible**
- ▶ **Managing GIS Data**
- ▶ **Future Plans**

Objectives

- ▶ Acquainted & re-acquainted
- ▶ TranStat GIS data offerings
- ▶ GIS applications
- ▶ Spatial data services
- ▶ Cost savings
- ▶ Lessons learned

Linear Referencing

- ▶ **Wealth of agency data (RCI, TCI)**
- ▶ **Consistent operational logic (ID, milepoints)**
- ▶ **GIS offers a perfect compliment**
- ▶ **Goals: Spatial data, quality control**

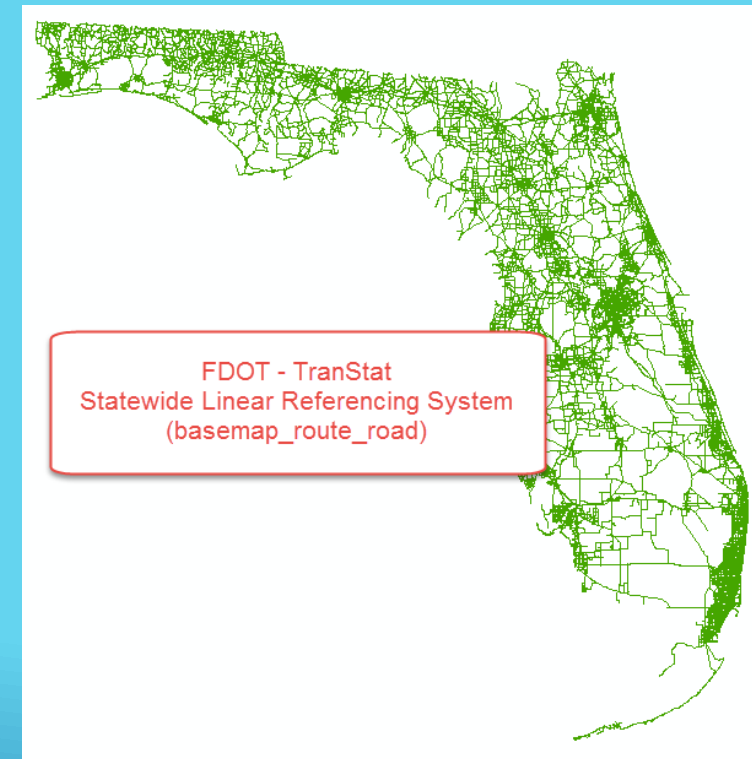
Linear Referencing

- ▶ Linear referencing puts data in its place:

Query Result x

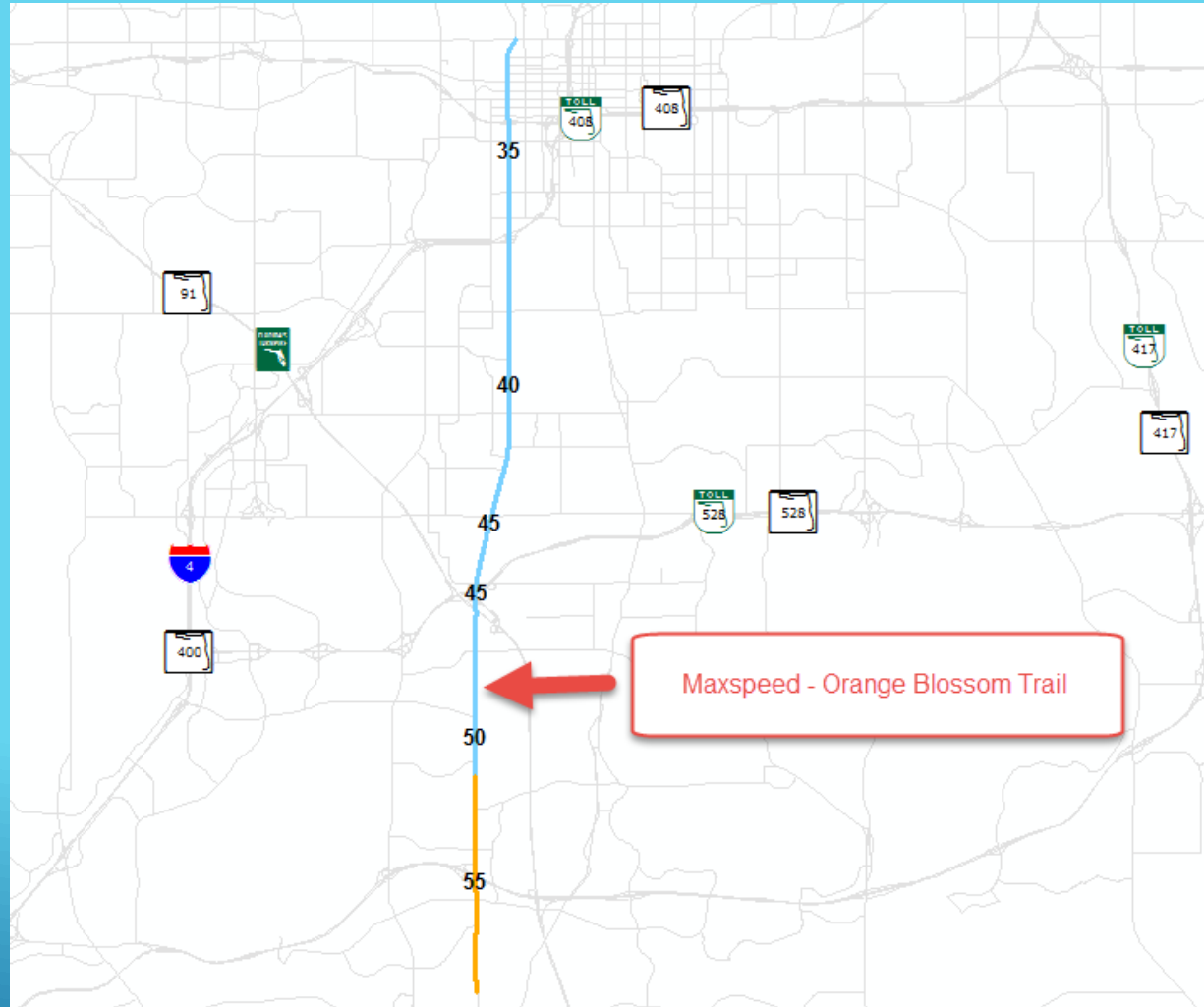
Tabular Data - RCI

	ROADWAY	ROAD_SIDE	BEGIN_POST	END_POST	OFFSET_DIRECT	SPEED
1	75010000	C	0	3.2		55
2	75010000	C	3.2	4.93		50
3	75010000	C	4.93	6.872		45
4	75010000	C	6.872	7.1		45
5	75010000	C	7.1	11.065		40
6	75010000	C	11.065	14.201		35



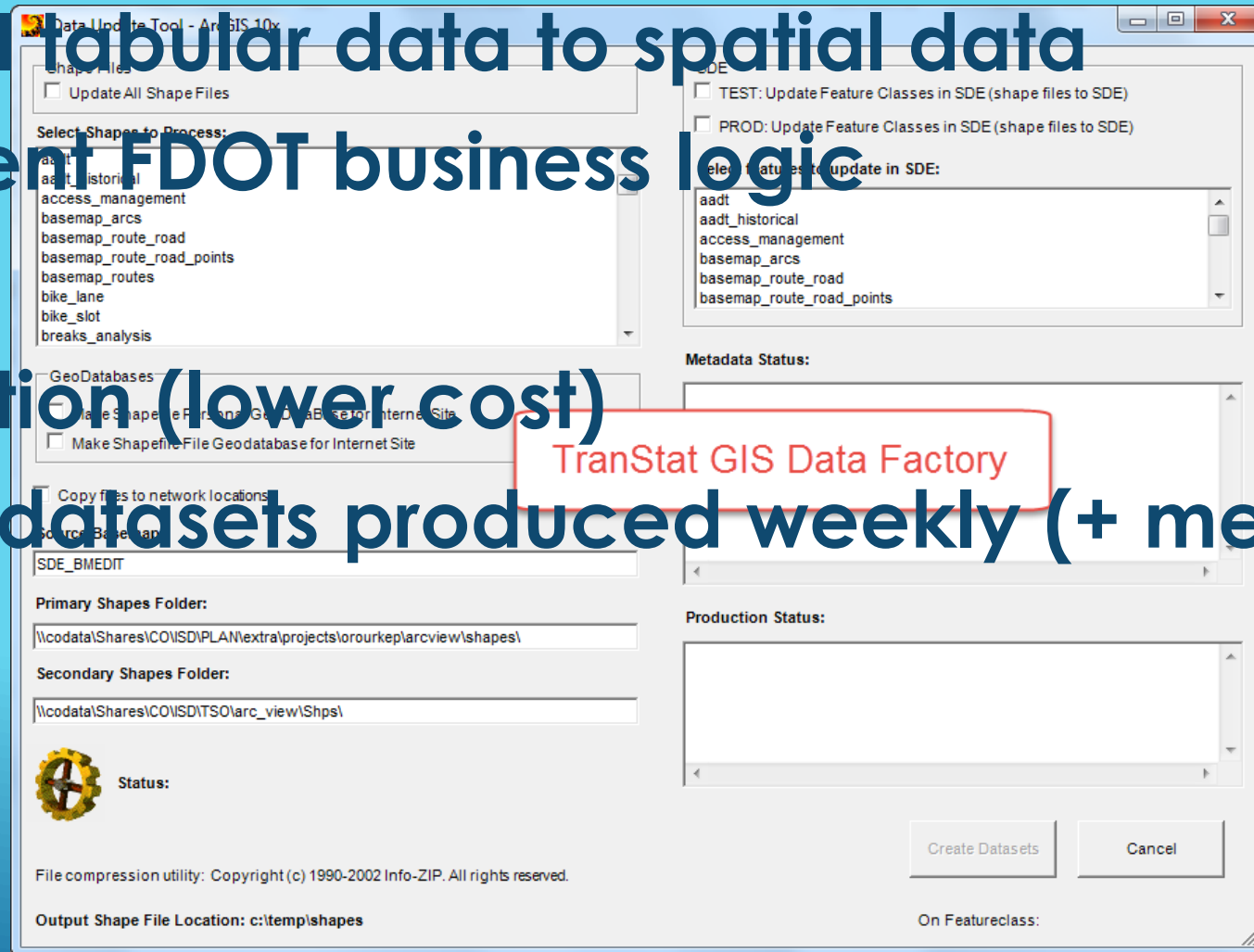
Linear Referencing

► Instant GIS dataset!



Linear Referencing

- ▶ RCI – TCI Tabular data to spatial data
- ▶ Fits current FDOT business logic
- ▶ CPR
- ▶ Automation (lower cost)
- ▶ 60+ GIS datasets produced weekly (+ metadata)



Putting GIS Data to Work

- ▶ Making desktop GIS user-friendly
- ▶ Make GIS part of doing business at FDOT
- ▶ Increase consistency
- ▶ Lower costs
- ▶ Extend GIS functionality
- ▶ Tools and extensions

Putting GIS Data to Work

How can I use (and other) tools?

The screenshot shows the GIS Application Manager window with the following table of applications:

Application	Version	Type
<input checked="" type="checkbox"/> Point_Converter	1.00	New
<input type="checkbox"/> FDOT Shield Extension	1.0.0.0	New
<input type="checkbox"/> FDOT TRANSTAT Query Tool	1.0.0.2	New
<input type="checkbox"/> Compass Direction	10.0.0.3	New
<input type="checkbox"/> Boundary Milepoints	10.0.0.4	New
<input type="checkbox"/> Image Tools	10.2.0.1	New
<input type="checkbox"/> Intersecting Milepoints	10.2.0.1	New
<input type="checkbox"/> Basemap Distance	10.2.0.1	New
<input type="checkbox"/> Zoom to Milepoint	10.2.0.1	New
<input type="checkbox"/> ArcGIS Services	10.2.0.1	New
<input type="checkbox"/> Curvature	10.2.0.1	New
<input type="checkbox"/> FDOT Data Library	3.1.0.0	New

This application will take a point layer and find the milepoints that are closest to each point within a specified tolerance.

Transtat GIS Application Manager
CO-TRANSTATGIS@dot.state.fl.us

Close

Status

Putting GIS Data to Work

► Applications...

Mosaic Raster Data to Spatial Database

Raster Dataset Source

Directory: Browse...

☐ Load from FGDB Raster Catalog

Spatial Database Connection

☒ ArcSDE

Server:

Instance:

Database:

User: Test Connection

Password:

☐ File Geodatabase

Directory: Browse...

Raster Dataset Target

☒ Append To:

☐ Create New:

☐ Create empty raster dataset

Status:

Options

☒ Use Defaults

Cell Size

X: Y:

Compression

Type:

Quality: (5 - low, 94 - high)

☐ Create Origin from Footprint

Directory: Browse...

Pyramid

Level: ☒ Build all appropriate levels (SDE)

☐ Do not build

☐ Build level

Resample Type:

Spatial Reference

File: Browse...

Cell Size

Height/Width:

☐ Calculate Statistics

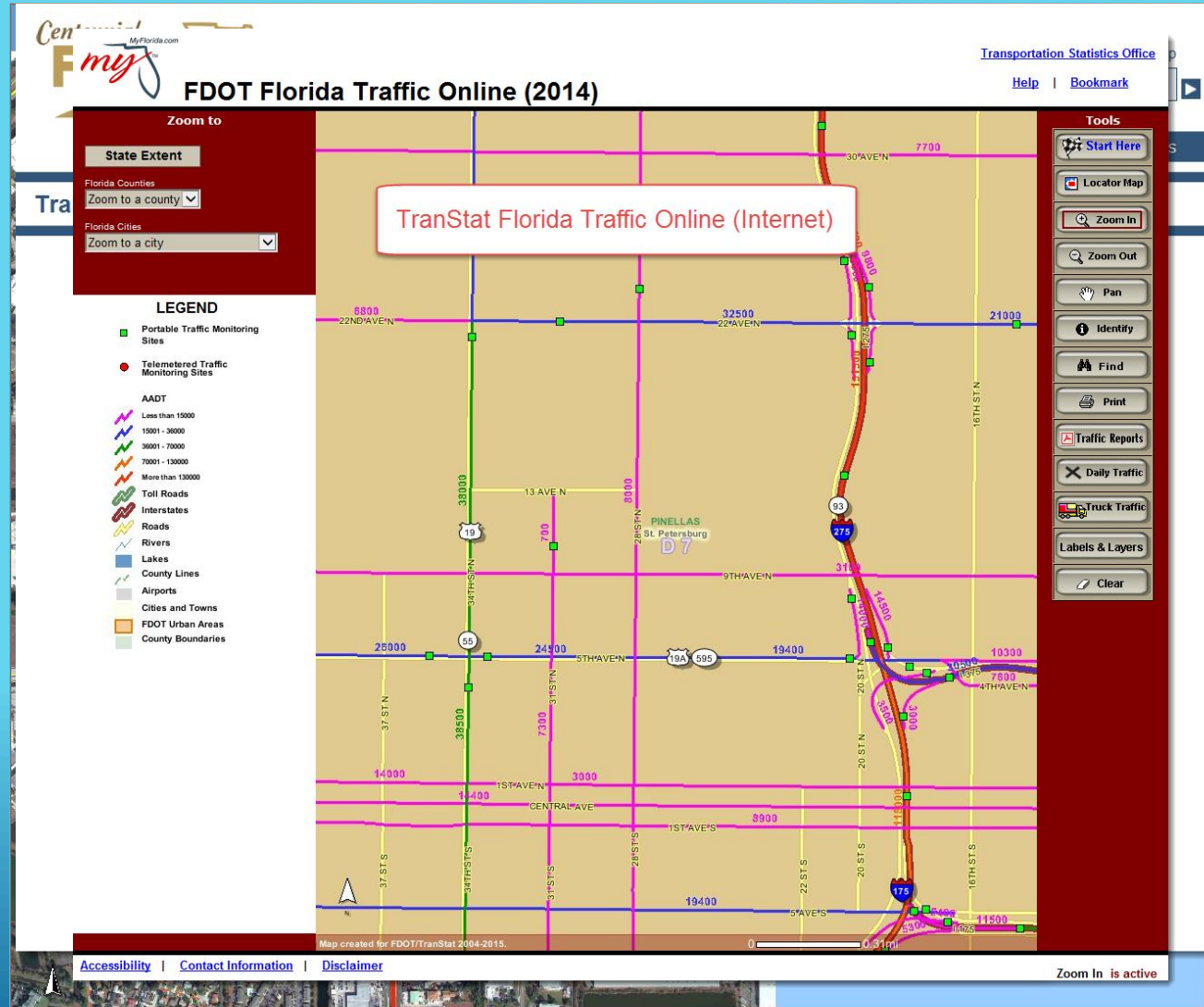
TranStat Image Loader Application

Mosaic

Making GIS Data Accessible

- ▶ Easier access for public, private sector
- ▶ Breaking out of the silo
- ▶ Share the wealth (imagery)
- ▶ Reach non Desktop GIS Users (web)
- ▶ Keep data up to date
- ▶ Metadata

Making GIS Data Accessible – Web



Making GIS Data Accessible – Spatial Database

- ▶ Intranet - TranStat
- ▶ Internet OIS-BSSO (subset/restricted)
- ▶ TranStat maintains test/production (2) instances
- ▶ ArcSDE-Oracle
- ▶ Refreshed weekly
- ▶ Access across agency – contact TranStat
- ▶ Data on-demand, new datasets

Managing GIS Data

- ▶ Availability – reliability
- ▶ Intranet web servers, application servers, databases
- ▶ Limited personnel resources
- ▶ AST – admin access
- ▶ Lower costs
- ▶ Automation (30+)
- ▶ Monitoring and remediation

Managing GIS Data

- Data quality
- Web site
- ArcGIS
- Every
- Email

File name: basemap_error_report_08_17_2015.txt
Size: 3 KB
Last changed: Monday, August 17, 2015

Message: basemap_error_report_08_17_2015.txt (3 KB) dual_carriageways_report_08_17_2015.txt (20 KB)

Time of analysis is: 8/17/2015 8:00:02 AM
Transaction ID for this run is: 14756424-ea39-4acd-b9bd-c18f3f6ff0ab
Use Transaction ID to query geometry discrepancies from SDEPROD.RouteArcGeomDiscrepancies
To select these records use: TRANSID = '14756424-ea39-4acd-b9bd-c18f3f6ff0ab'
Connection exception list stored in OKDisconnects.txt...add exceptions to this file as needed.

Non-Unique Roadway ID Analysis:
No non-unique Roadway IDs in the Basemap Routes

Null Roadway ID in Routes Feature Class Analysis:
No Null Roadway IDs in Routes feature class

Multi-part Routes Analysis:
No multi-part routes in Routes feature class

Route Geometry Different from Arc Geometry Analysis:
No Route-Arc Geometry Differences

Disconnected Routes Analysis (5 m):
Only Route Endpoints Examined...
72002827 disconnected from 72002427

Self-Intersecting Arcs Analysis:
OID2: 181857, ROADWAY: 87471517
OID2: 185288, ROADWAY: 75301045

Routes With Null Geometry in Routes Feature Class Analysis:
No Routes with Null Geometry in Routes Feature Class

Routes With No Corresponding Arcs Analysis:
No Routes With Missing Arcs

Arcs With No Corresponding Route Analysis:
No Arcs With Missing Route

Roadway IDs present in Basemap Routes but not RCI:
ROADWAY: 92030100

TranStat Basemap Error Report

Future Plans

- ▶ ArcIMS → ArcGIS Server/Framework
- ▶ AST Migration (database/servers)
- ▶ ArcGIS 10.2.2 (server side)
- ▶ Consolidated geodatabases
- ▶ Evaluate open source
- ▶ Freight/ITS data offerings
- ▶ ARNOLD

Conclusions

- ▶ Adding geography adds value to data
- ▶ GIS is central to doing business more effectively
- ▶ Doing more with less
- ▶ We want to get you the GIS data you need
- ▶ We want to share our customizations/ideas